UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

23/JUL/2009

MEMORANDUM

Subject:	Name of Pesticide Product:	OPTILL™ powered by KIXOR® Herbicide
	EPA File Symbol:	7969-EIN
	DP Barcode:	D352236
	Decision No.:	389164
	Action Code:	R010.0
	PC Code:	118203 BAS 800 H (Saflufenacil)
		128922 Imazethapyr

From: Rick J. Whiting, Biologist
Technical Review Branch (TRB)
Registration Division (7505P)

R. Whiting M Hasbrouck T.L. Toxicology

To: Kathryn Montague / Joanne Miller, RM Team 23
Herbicide Branch
Registration Division (7505P)

Applicant: BASF Corporation
Agricultural Products
P.O. Box 13528
Research Triangle Park, NC 27709-3528

FORMULATION FROM LABEL:

Active Ingredient(s):	% by wt
118203 BAS 800 H (Saflufenacil) [CAS No. 372137-35-4]	70.0
128922 Imazethapyr [CAS No. 81335-77-5]	
Inert Ingredient(s):	30.0
Total:	100.0%

ACTION REQUESTED: The Risk Manager requests: "Please review this acute toxicology data for the Saflufenacil product. This product was delayed due to issues with inerts clearance. The inerts have now been cleared and the reviewer can proceed. This is part of the trilateral review for the new a.i. Saflufenacil (BAS 800H)."

BACKGROUND: BASF Corporation has submitted six acute toxicity studies, a Basic CSF dated December 6, 2007 and a proposed label to support the registration of OPTILL™ powered by KIXOR® Herbicide (previously named BAS 804 00 H LegVeg Herbicide), EPA File Symbol 7969-EIN. The acute oral and dermal studies were conducted at Austrian Research Centers GmbH – ARC and assigned MRID numbers 47128606 and 47128607. The acute inhalation study was conducted at RCC Ltd. Toxicology and assigned MRID number 47128608. The primary eye and dermal irritation studies and the dermal sensitization study were conducted at Experimental Toxicology and Ecology and assigned MRID numbers 471286-09 thru -11. An Agency contractor, Oak Ridge National Laboratory, conducted the primary review of the studies. TRB performed the secondary review and made changes as necessary.

COMMENTS AND RECOMMENDATIONS:

1. The six studies have been reviewed and are classified as acceptable.

2. The acute toxicity profile for OPTILL™ powered by KIXOR® Herbicide, EPA File Symbol 7969-EIN, is as follows:

Acute oral toxicity	III	Acceptable	MRID 47128606
Acute dermal toxicity	III	Acceptable	MRID 47128607
Acute inhalation toxicity	IV	Acceptable	MRID 47128608
Primary eye irritation	III	Acceptable	MRID 47128609
Primary skin irritation	IV	Acceptable	MRID 47128610
Dermal sensitization	Negative	Acceptable	MRID 47128611

3. Based on the toxicity profile above, the following are the precautionary and first aid statements for this product as obtained from the Label Review System:

PRODUCT ID #: 007969-00280

PRODUCT NAME: OPTILL™ powered by KIXOR® Herbicide

PRECAUTIONARY STATEMENTS

SIGNAL WORD: CAUTION

Hazards to Humans and Domestic Animals:

Harmful if absorbed through skin. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. [Wear protective eyewear.]* Wear long-sleeved shirt and long pants, socks, shoes, and chemical-resistant gloves (such as Natural Rubber, Selection Category A). Remove and wash contaminated clothing before reuse.

* [Protective eyewear may be specified, if appropriate]

First Aid:

If on skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to by a poison control center or doctor. Do not give anything to an unconscious person.

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-800-xxx-xxxx for emergency medical treatment information.

4. In addition, TRB noted that the registrant has included additional First Aid statements. TRB finds this additional labelling information acceptable.

5. The Basic Formulation CSF (dated December 6, 2007) for the proposed product should also be reviewed and accepted by the TRB Chemistry Team.

DATA EVALUATION RECORD

IMAZETHAPYR AND BENZAMIDE, 2-CHLORO-5-[3,6-DIHYDRO-3-METHYL-2,6-DIOXO-4-(TRIFLUOROMETHYL)-1(2H)-PYRIMI...

(BAS 804 00 H)

STUDY TYPE: ACUTE ORAL TOXICITY - RAT [OPPTS 870.1100; OECD 423]
ACUTE DERMAL TOXICITY - RAT [OPPTS 870.1200; OECD 402]
ACUTE INHALATION TOXICITY - RAT [OPPTS 870.1300; OECD 403]
ACUTE EYE IRRITATION - RABBIT [OPPTS 870.2400; OECD 405]
ACUTE DERMAL IRRITATION - RABBIT [OPPTS 870.2500; OECD 404]
DERMAL SENSITIZATION - GUINEA PIG [OPPTS 870.2600; OECD 406]

MRID 47128606, 47128607, 47128608, 47128609, 47128610, and 47128611

Prepared for
Registration Division
Office of Pesticide Programs
U.S. Environmental Protection Agency
One Potomac Yard
2777 South Crystal Drive
Arlington, VA 22202

Prepared by
Toxicology and Hazard Assessment Group
Environmental Sciences Division
Oak Ridge National Laboratory
Oak Ridge, TN 37831
Task Order No. 1-26

Primary Reviewer:
Susan Chang, M.S.

Signature:
Date: JUL 10 2008

Secondary Reviewers:
Sylvia Milanez, Ph.D., D.A.B.T.

Signature:
Date: JUL 10 2008

Robert H. Ross, M.S., Group Leader

Signature:
Date: JUL 10 2008

Quality Assurance:
Lee Ann Wilson, M.A.

Signature:
Date: JUL 10 2008

Disclaimer

This review may have been altered subsequent to the contractor's signatures above.

Oak Ridge National Laboratory managed and operated by UT-Battelle, LLC., for the U.S. Department of Energy under Contract No. DE-AC05-00OR22725.

Primary Reviewer: Susan Change, M.S., ORNL **Date: June 21, 2008**
Secondary Reviewer: Rick Whiting, EPA
Risk Manager (EPA): 23

STUDY TYPE: Acute Oral Toxicity – Rat; OPPTS 870.1100; OECD 423

TEST MATERIAL: BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; brown solid, dispersible in water)

CITATION: Wolf, T. (2007) BAS 804 00 H – Acute Oral Toxicity Study with Rats (Acute Toxic Class Method). Report Nos. 10A0174/069081 BAS17 and BASF Registration Document No. 2007/1044692. Austrian Research Centers GmbH – ARC, Toxicology, 2444 Seibersdorf, Austria. October 29, 2007. MRID 47128606.

SPONSOR: BASF Aktiengesellschaft, GV/TA-Z470, 67056 Ludwigshafen, Germany

EXECUTIVE SUMMARY: In an acute oral toxicity study (MRID 47128606), six (three per group) fasted, young adult female Crl: (WI) BR rats (age: approximately 8 weeks; body weight: 183-188 g; source: Charles River Deutschland GmbH, D-97633 Sulzfeld) were given a single dose of BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1) as a dispersion in water at a dose of 2000 mg/kg bw by gavage. Body weights were determined before administration and on Days 7 and 14. The test animals were observed for mortality and signs of toxicity at 0.5, 1, 2, 3, 4 and 6 hours after dosing and at least once daily thereafter for up to 14 days. Gross necropsies were performed on all decedents and euthanized animals.

All animals survived the study and were normal and gained weight throughout the study. All animals were normal at the necropsy.

LD_{50} Females > 2000 mg/kg bw

Based on the LD_{50}, BAS 804 00 H is classified as EPA Toxicity Category III.

This study is classified as Acceptable. It does satisfy the guideline requirements for an acute oral study (OPPTS 870.1100; OECD 423) in the rat.

COMPLIANCE: Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

Animals were dosed as follows:

TABLE 1. Doses, mortality/animals treated

Dose (mg/kg)	Males	Females	Combined
2000	-	0/3	0/3
2000	-	0/3	0/3

Data taken from p. 17, MRID 47128606.

A. Mortality: All animals survived the study.

B. Clinical observations: All animals were normal and gained weight throughout the study.

C. Gross necropsy: All animals were normal at the necropsy.

D. Reviewer's conclusions: This reviewer agrees with the study author regarding the acute oral LD_{50}.

Primary Reviewer: Susan Change, M.S., ORNL **Date: June 21, 2008**
Secondary Reviewer: Rick Whiting, EPA
Risk Manager (EPA): 23

STUDY TYPE: Acute Dermal Toxicity – Rat; OPPTS 870.1200; OECD 402

TEST MATERIAL: BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; brown solid, dispersible in water)

CITATION: Wolf, T. (2007) BAS 804 00 H – Acute Dermal Toxicity Study with Rats. Report Nos. 11A0174/069080 BAS18 and BASF Registration Document No. 2007/1044693. Austrian Research Centers GmbH – ARC, Toxicology, 2444 Seibersdorf, Austria. October 29, 2007. MRID 47128607.

SPONSOR: BASF Aktiengesellschaft, GV/TA-Z470, 67056 Ludwigshafen, Germany

EXECUTIVE SUMMARY: In an acute dermal toxicity study (MRID 47128607), five male and five female young adult Crl: (WI) BR rats (age: males: approximately 8 weeks and females: approximately 12 weeks; body weight: males: 248-271 g and females: 216-234 g; source: Charles River Deutschland GmbH, D-97633 Sulzfeld) were dermally exposed for 24 hours on an area of approximately 10% of the total body surface area on the clipped dorsal trunk to 2000 mg/kg bw BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1) as received. The test material was applied on a cellulose patch soaked with deionized water and placed over the dose area at the dorsal thoracal region and secured with non-irritating tape and covered with semi-occlusive dressing. After the exposure period, residual test material was wiped off using wet cellulose tissue.

Body weights were determined before administration and on Days 7 and 14. The test animals were observed for mortality and signs of toxicity at 0.5, 1, 2, 3, 4 and 6 hours after dosing and at least once daily thereafter for up to 14 days. Gross necropsies were performed on all decedents and euthanized animals.

All animals survived the study. All animals were normal throughout the study. No dermal irritation was noted at the dose site. Two females lost weight during the first week, but gained weight by the end of the study. All other animals gained weight throughout the study. All animals were normal at necropsy.

LD_{50} Males > 2000 mg/kg bw
LD_{50} Females > 2000 mg/kg bw
LD_{50} Combined > 2000 mg/kg bw

Based on the LD_{50}, BAS 804 00 H is classified as EPA Toxicity Category III.

This study is classified as Acceptable. It does satisfy the guideline requirements for an acute dermal study (OPPTS 870.1200; OECD 402) in the rat.

COMPLIANCE: Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

Dose (mg/kg bw)	Mortality/Number Tested		
	Males	Females	Combined
2000	0/5	0/5	0/10

A. **Mortality:** All animals survived the study.

B. **Clinical observations:** All animals were normal throughout the study. No dermal irritation was noted at the dose site. Two females lost weight during the first week, but gained weight by the end of the study. All other animals gained weight throughout the study.

C. **Gross necropsy:** All animals were normal at necropsy.

D. **Reviewer's conclusions:** This reviewer agrees with the study author regarding the acute dermal LD_{50}.

Primary Reviewer: Susan Change, M.S., ORNL **Date: June 21, 2008**
Secondary Reviewer: Rick Whiting, EPA
Risk Manager (EPA): 23

STUDY TYPE: Acute Inhalation Toxicity – Rat; OPPTS 870.1300; OECD 403

TEST MATERIAL: BAS 804 00 H (17.37% BAS 800 H and 51.99% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; beige to brown solid, dispersible in water)

CITATION: Ma-Hock, L. (2007) BAS 804 00 H – Acute Inhalation Toxicity Study in Wistar Rats. Report Nos. 13I0174/069090 B55978 and BASF Registration Document No. 2007/1053326. RCC Ltd. Toxicology, Wölferstrasse 4, CH-4414 Füllinsdorf, Switzerland. October 23, 2007. MRID 47128608.

SPONSOR: BASF Aktiengesellschaft, GV/TA-Z470, 67056 Ludwigshafen, Germany

EXECUTIVE SUMMARY: In an acute inhalation toxicity study (MRID 47128608), five male and five female young adult Wistar HanRcc:WIST(SPF) rats (age: males: 9 weeks and females: 10 weeks; body weight: males: 265.6-288.7 g and females: 217.5-220.6 g; source: RCC Ltd Laboratory Animal Services, Wölferstasse 4, CH-4414 Füllinsdorf, Switzerland) were exposed by nose-only inhalation to an aerosol of BAS 804 00 H (17.37% BAS 800 H and 51.99% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1) for 4 hours at a concentration of 5.121 mg/L. Body weights were recorded on test days 1 (before exposure), 4, 8 and 15 (day of necropsy). Mortality was checked once before exposure on test day 1, once per hour during the exposure period, once after exposure on test day 1, and twice daily during the remainder of the observation period. Clinical signs were recorded once per hour during the exposure period, once after the exposure on test day 1, and once daily thereafter. The animals were observed for 14 days. The MMADs were 3.24 and 3.23 μm and the GSD 2.82 and 2.86 at 1.5 and 3.5 hours, respectively.

All animals survived and no clinical signs were noted from any animal during the study. Two females lost weight slightly on day 4, but gained weight by days 8 and 15. All other animals gained weight throughout the study. No findings were noted in any animal at necropsy.

LC_{50} Males > 5.121 mg/L
LC_{50} Females > 5.121 mg/L
LC_{50} Combined > 5.121 mg/L

Based on the LC_{50}, BAS 804 00 H is classified as EPA Toxicity Category IV.

This study is classified as Acceptable. It does satisfy the guideline requirements for an acute inhalation study (OPPTS 870.1300; OECD 403) in the rat.

COMPLIANCE: Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

Nominal Conc. (mg/L)	Gravimetric Conc. (mg/L)	MMAD µm	GSD	Mortality/Number Tested		
				Males	Females	Combined
7.87	5.121	3.23, 3.24	2.82, 2.86	0/5	0/5	0/10

Test Atmosphere / Chamber Description: The test material was milled before using. The aerosol was generated from the test material using a rotating brush aerosol generator connected to a micronized jet mill. The aerosol was discharged into exposure chamber through a ^{63}Ni charge neutralizer. Animals were confined separately in restraining tubes positioned radially around the nose-only, flow-past exposure chamber.

Gravimetric Conc. (mg/L):	5.121
Chamber Volume (L):	55
Total Airflow (L/min):	34.0
Temperature (°C):	19.7 - 20.6
Relative Humidity (%):	1.8 - 4.5
Time to equilibrium (min):	Not reported

Test atmosphere concentration: Gravimetric determinations of aerosol concentration were performed four times during exposure using a Millipore durapore filter, Type HVLP, loaded in a 47 mm in-line stainless steel filter sampling device (Gelman Science Inc., Ann Arbor, MI). The nominal concentration was determined by weighing the generator cylinder containing the test material before and after the exposure to determine the quantity of test material used. The total weight used during the exposure was divided by the total airflow volume to give the nominal concentration.

Particle size determination: Particle size distribution was measured gravimetrically twice at the breathing zone of the animals during exposure using a seven-stage cascade Mercer Impactor (Model 02-130, In-Tox, Products Inc., Albuquerque, NM). The mass median aerodynamic diameter (MMAD) and geometric standard deviation (GSD) were calculated using Microsoft Excel 2000 software.

A. **Mortality:** All animals survived the study.

B. **Clinical observations:** No clinical signs were noted from any animal during the study. Two females lost weight slightly on day 4, but gained weight by days 8 and 15. All other animals gained weight throughout the study.

C. **Gross necropsy:** No findings were noted in any animal at necropsy.

D. Reviewer's conclusions: This reviewer agrees with the study author regarding the acute inhalation LC_{50}.

Primary Reviewer: Susan Change, M.S., ORNL **Date: June 21, 2008**
Secondary Reviewer: Rick Whiting, EPA
Risk Manager (EPA): 23

STUDY TYPE: Primary Eye Irritation – Rabbit; OPPTS 870.2400; OECD 405

TEST MATERIAL: BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; brown solid, dispersible in water)

CITATION: Landsiedel, R. (2007) BAS 804 00 H – Acute Eye Irritation in Rabbits. Report Nos. 11H0174/062285 and BASF Registration Document No. 2007/1052012. Experimental Toxicology and Ecology, BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany. December 17, 2007. MRID 47128609.

SPONSOR: BASF Aktiengesellschaft, GV/TA-Z470, 67056 Ludwigshafen, Germany

EXECUTIVE SUMMARY: In a primary eye irritation study (MRID 47128609), 0.1 mL (~ 38 mg) of undiluted BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; pH ~4) was instilled into the conjunctival sac of the right eye of one male and two female young adult New Zealand White A 1077 INRA (SPF) rabbits (age: 3-4 months; weight: male: 3.03 kg and females: 2.99-3.10 kg; source: Centre Lago S.A., 01540 Vonnas, France). The treated eyes were rinsed with 3-6 mL water for 1-2 minutes 24 hours after test material instillation. The untreated eye served as a control. Ocular irritation was evaluated at 1, 24, 48 and 72 hours and Day 7 post-instillation.

Corneal opacity and iritis were not noted on any rabbit during the study. Positive conjunctival irritation (redness and chemosis, score 2) was noted on 3/3 rabbits one hour after test material instillation with clearance on two rabbits by 48 hours and on the third rabbit by 72 hours. Circular injected scleral vessels were noted in the animals during the study. BAS 804 00 H was mildly irritating. The highest maximum mean total score was 9.3, recorded one hour after test material instillation.

In this study, the formulation was mildly irritating. BAS 804 00 H is in EPA Toxicity Category III for primary eye irritation.

This study is classified as Acceptable. It does satisfy the guideline requirements for a primary eye irritation study (OPPTS 870.2400; OECD 405) in the rabbit.

COMPLIANCE: Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

	Number "positive"/Number treated				
	Hours				Days
Observations	**1**	**24**	**48**	**72**	**7**
Corneal Opacity	0/3	0/3	0/3	0/3	0/3
Iritis	0/3	0/3	0/3	0/3	0/3
Conjunctivae:					
Redness*	3/3	3/3	1/3	0/3	0/3
Chemosis*	2/3	1/3	0/3	0/3	0/3
Discharge*	0/3	0/3	0/3	0/3	0/3

* Score of 2 or more required to be considered "positive"

A. **Observations:** Corneal opacity and iritis were not noted on any rabbit during the study. Positive conjunctival irritation (redness and chemosis, score 2) was noted on 3/3 rabbits one hour after test material instillation with clearance on two rabbits by 48 hours and on the third rabbit by 72 hours. Circular injected scleral vessels were noted in the animals during the study.

B. **Results:** BAS 804 00 H was mildly irritating. The highest maximum mean total score was 9.3 (calculated by the reviewer), recorded one hour after test material instillation.

C. **Reviewer's conclusions:** The study author stated that the test material "does not show an eye irritation potential under the test conditions chosen." This reviewer disagrees with the study author and classifies the test material as mildly irritating.

Primary Reviewer: Susan Change, M.S., ORNL **Date: June 21, 2008**
Secondary Reviewer: Rick Whiting, EPA
Risk Manager (EPA): 23

STUDY TYPE: Primary Dermal Irritation – Rabbit; OPPTS 870.2500; OECD 404

TEST MATERIAL: BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; brown solid, dispersible in water)

CITATION: Landsiedel, R. (2007) BAS 804 00 H – Acute Dermal Irritation/Corrosion in Rabbits. Report Nos. 18H0174/062284 and BASF Registration Document No. 2007/1052011. Experimental Toxicology and Ecology, BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany. December 17, 2007. MRID 47128610.

SPONSOR: Aktiengesellschaft, GV/TA-Z470, 67056 Ludwigshafen, Germany

EXECUTIVE SUMMARY: In a primary dermal irritation study (MRID 47128610), three male young adult New Zealand White A 1077 INRA (SPF) rabbits (age: 6-8 months; source: Centre Lago S.A., 01540 Vonnas, France) were dermally exposed to 0.5 mL of undiluted BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; pH ~4) for 4 hours on the clipped dorsolateral skin. The test material was minimally moistened with a suitable amount of doubly distilled water and was applied on a test patch (2.5 cm x 2.5 cm) and placed on the application site. After the exposure period, any residual test material was removed with Lutrol® / water (1 : 1). The animals were observed and irritation was scored at 1, 24, 48, and 72 hours after patch removal.

Well defined erythema (grade 2) was noted on 3/3 rabbits immediately after patch removal and at 1 hour. Well defined erythema was noted on 2/3 rabbits at 24 hours with reduction to very slight erythema (grade 1) by 48 hours and with clearance by 72 hours. Very slight erythema was noted on one rabbit at 24 hours with clearance by 48 hours. All dermal irritation was resolved by 72 hours.

In this study, the formulation was slightly irritating based on the Primary Irritation Index (PII) of 1.1. BAS 804 00 H is in EPA Toxicity Category IV for primary dermal irritation.

This study is classified as Acceptable. It does satisfy the guideline requirements for a primary dermal irritation study (OPPTS 870.2500; OECD 404) in the rabbit.

COMPLIANCE: Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided.

RESULTS and DISCUSSION:

INDIVIDUAL SKIN IRRITATION SCORES

ERYTHEMA/EDEMA

Animal No.	Sex	Hours After Patch Removal				
		0	1	24	48	72
453	M	2/0	2/0	1/0	0/0	0/0
461	M	2/0	2/0	2/0	1/0	0/0
433	M	2/0	2/0	2/0	1/0	0/0
Severity of Irritation - Mean Score		2.0	2.0	1.7	0.7	0.0

A. **Observations:** Well defined erythema (grade 2) was noted on 3/3 rabbits immediately after patch removal and at 1 hour. Well defined erythema was noted on 2/3 rabbits at 24 hours with reduction to very slight erythema (grade 1) by 48 hours and with clearance by 72 hours. Very slight erythema was noted on one rabbit at 24 hours with clearance by 48 hours. All dermal irritation was resolved by 72 hours.

B. **Results:** BAS 804 00 H was slightly irritating. The Primary Irritation Index (PII) is 1.1 (calculated by the reviewer).

C. **Reviewer's conclusions:** This reviewer agrees with the study author that the test material is slightly irritating.

Primary Reviewer: Susan Change, M.S., ORNL **Date: June 21, 2008**
Secondary Reviewer: Rick Whiting, EPA
Risk Manager (EPA): 23

STUDY TYPE: Dermal Sensitization – guinea pig; OPPTS 870.2600; OECD 406

TEST MATERIAL: BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; brown solid, dispersible in water)

CITATION: Landsiedel, R. (2007) BAS 804 00 H – Modified Buehler Test (9 inductions) in Guinea pigs. Report Nos. 33H0174/062286 and BASF Registration Document No. 2007/1052013. Experimental Toxicology and Ecology, BASF Aktiengesellschaft, 67056 Ludwigshafen, Germany. December 17, 2007. MRID 47128611.

SPONSOR: BASF Aktiengesellschaft, GV/TA-Z470, 67056 Ludwigshafen, Germany

EXECUTIVE SUMMARY: In a dermal sensitization study (MRID 47128611) with BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1), 30 female young adult Dunkin Hartley Crl:HA guinea pigs (age: 5-8 weeks; body weight: 378-445 g; source: Charles River Laboratories, Research Models and Services, Germany GmbH, Stolzenseeweg 32 -36, 88353 Kisslegg) were tested using the modified Buehler Method. The test animals were induced for six hours with 0.5 mL of 50% w/w test material in doubly distilled water absorbed onto 2 cm x 2 cm gauze patches. The patches were covered with occlusive dressing. The procedure was repeated three times each week on alternative days for three consecutive weeks. Reactions were scored 24 hours after the beginning of application. Thirteen days after the last induction, the test animals were challenged for six hours with 0.5 mL of 25% w/w test material in distilled water under occlusion to naive sites. The naive control animals were treated with 0.5 mL of 25% w/w test material in distilled water under occlusion for six hours at challenge. Reactions were scored 24 and 48 hours after removal of the patch.

After three inductions per week for three consecutive weeks, the test and naive control animals had no dermal irritation after challenge. The test material was not a dermal sensitizer.

Based on the results of this study, BAS 804 00 H was not a dermal sensitizer.

This study is classified as Acceptable. It does satisfy the guideline requirements for a dermal sensitization study (OPPTS 870.2600; OECD 406) in the guinea pig.

COMPLIANCE: Signed and dated GLP, Quality Assurance and Data Confidentiality statements were provided.

PROCEDURE:

A. **Induction**: The animals were induced and challenged according to the modified Buehler method. The flank areas of 20 test guinea pigs were clipped twice per week during induction phase and once before challenge. For induction, 0.5 mL of undiluted test material was applied to the animal using a 2 cm x 2 cm gauze patch absorbed with the test material and covered with occlusive dressing. The covering was removed after six hours and excess test material removed. The procedure was repeated three times each week on alternative days for three consecutive weeks. Reactions were scored 24 hours after the beginning of application.

B. **Challenge**: Thirteen days after the ninth induction, the test animals were challenged with 0.5 mL of undiluted test material under occlusion to naive sites for 6 hours. Reactions were scored 24 and 48 hours after patch removal.

C. **Naive control:** The dorsal flank areas of 10 naive control animals were clipped prior to treatment. At challenge, the naive control group was treated with 0.5 mL of undiluted test material for 6 hours. Reactions were scored 24 and 48 hours after patch removal.

RESULTS and DISCUSSION:

A. **Reactions and durations**: Discrete or patchy to moderate and confluent erythema was noted on 19/20 test animals over the course of nine inductions. The test and naive control animals had no dermal irritation after challenge. The test material was not a dermal sensitizer.

B. **Positive control**: The report included the results of a positive control (alpha-hexylcinnamaldehyde) study conducted within six months of the current study; the results were appropriate.

C. **Reviewer's conclusion**: This reviewer agrees with the study author that the test material is not a dermal sensitizer.

ACUTE TOX ONE-LINERS

1. **DP BARCODE:** DP352236
2. **PC CODE:** 128922 and 118203
3. **CURRENT DATE:** 23/JUL/2009
4. **TEST MATERIAL:** BAS 804 00 H (17.4% BAS 800 H and 51.6% Imazethapyr; Batch No. 1641-22, BASF – Test Substance No. 06/0174-1; brown solid, dispersible in water)

Study/Species/Lab Study # /Date	MRID	Results	Tox. Cat.	Core Grade
Acute oral toxicity / rat Austrian Research Centers GmbH - ARC 10A0174/069081 and BAS17 October 29, 2007	47128606	LD_{50} > 2000 mg/kg (females)	III	A
Acute dermal toxicity / rat Austrian Research Centers GmbH - ARC 11A0174/069080 and BAS18 October 29, 2007	47128607	LD_{50} > 2000 mg/kg (males and females)	III	A
Acute inhalation toxicity / rat RCC Ltd. Toxicology 13I0174/069090 / October 23, 2007	47128608	LC_{50} > 5.121 mg/L (males and females)	IV	A
Primary eye irritation / rabbit Experimental Toxicology & Ecology 11H0174/062285 December 17, 2007	47128609	Mildly irritating	III	A
Primary dermal irritation / rabbit Experimental Toxicology & Ecology 18H0174/062284 December 17, 2007	47128610	Slightly irritating	IV	A
Dermal sensitization / guinea pig Experimental Toxicology & Ecology 33H0174/062286 December 17, 2007	47128611	Not sensitizing	---	A

Core Grade Key: A =Acceptable, S = Supplementary, U = Unacceptable, W = Waived